

Wyoming Volunteer Firefighter and Emergency Medical Technician Pension Fund

Actuarial Valuation Report
for the Year Beginning January 1, 2018



April 6, 2018

Board of Trustees

Wyoming Volunteer Firefighter and Emergency Medical Technician Pension Fund

6101 Yellowstone Road

Suite 500

Cheyenne, WY 82002

Dear Board of Trustees:

Subject: Actuarial Valuation as of January 1, 2018

We are pleased to present the report of the actuarial valuation of the Wyoming Volunteer Firefighter and Emergency Medical Technician Pension Fund ("the Fund") for the plan year commencing January 1, 2018. This report describes the current actuarial condition of the Fund and determines the calculated employer contribution amount (the actuarially determined contribution amount). Valuations are prepared annually, as of January 1, the first day of the Fund's plan year.

Financing objectives and funding policy

The employee contribution amounts are specified in statute. The state treasurer shall deposit into the Fund 70% of the gross tax levied upon fire insurance premiums paid to insurance companies for fire insurance in the state. The purpose of this actuarial valuation is to determine whether or not these contribution amounts are sufficient to meet the obligations of the Fund.

Progress toward realization of financing objectives

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan's funded status. The funded ratio, based upon the assumption of no future cost-of-living adjustments as of January 1, 2018 is 74.40%. This compares to a funded ratio of 76.46% for the prior year. On a market value of assets basis, the funded ratio is 75.06% as of January 1, 2018, compared to a funded ratio of 72.41% for the prior year. The funded status alone is not appropriate for assessing the need for future contributions. The funded status is also not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.

Benefit provisions

This is a newly established fund as of July 1, 2015, created under House Bill 72 of the 2015 General Session, which replaces the Volunteer Firemen's Pension Fund and the Volunteer Firefighter Emergency Medical Technician Pension Fund. The benefit provisions reflected in this valuation are those which were in effect on January 1, 2018. W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above 100% plus a margin for adverse experience throughout the life of the benefit change. Therefore, this valuation does not include any liability for future cost-of-living increases.

The benefit provisions are summarized in Appendix B of the report.

Assumptions and methods

Actuarial assumptions and methods are set by the Board, based upon recommendations made by the plan's actuary.

Below is a summary of the changes in assumptions:

1. **Inflation:** reduce the current assumption of 3.25% to 2.25%.
2. **Real rate of return:** increase the current assumption from 4.50% to 4.75%.
3. **Nominal rate of return:** decrease the nominal investment return assumption (the sum of inflation and the real rate of return) from 7.75% to 7.00%.
4. **Wage inflation:** reduce the wage inflation assumption from 4.25% to 2.50%.
5. **Administrative expenses:** recommend reducing the assumed annual increase in expenses from 6.50% per year to 2.50%.
6. **Post-retirement mortality, disabled lives mortality, active life mortality:** update to the RP2014 table, projected generationally using MP 2017.
7. **Retirement (unreduced retirement):** modify to the retirement rates to reflect actual experience.
8. **Termination (withdrawal):** adjust rates to reflect observed experience.

The assumption changes increased the accrued liability by \$4.9 million.

The results of the actuarial valuation are dependent upon the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution amounts and funding periods. The actuarial calculations presented in the report are intended to provide information for rational decision making.

The employer contribution requirement in Table 1 of this report is determined using the actuarial assumptions and methods disclosed in Appendix A of this report. This report does not include a detailed assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment. We encourage a review and assessment of investment and other significant risks that may have a material effect on the plan's financial condition.

All assumptions and methods are described in Appendix A of the report.

Data

Member data for retired, active and inactive members was supplied as of January 1, 2018 by the Fund's staff. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data.

Asset and financial information as of January 1, 2018 was prepared by Wyoming Retirement System and is the responsibility of management. Eide Bailly, LLP provided us the asset and financial information and will opine on Wyoming Retirement System's statements.

Plan experience

As part of each valuation, we examine the Fund's experience relative to the assumptions. As experience in a given year deviates from the assumptions, a gain occurs if the liabilities grow slower than the assumption set anticipates and a loss occurs if the liabilities grow faster. This past fiscal year, the Fund had a total experience loss of approximately \$0.04 million, composed of a \$0.78 million investment loss, a \$0.39 million contribution gain, and a \$0.36 million liability gain. The gain in liability was primarily due to fewer retirements than expected. The aggregate results of these analyses are disclosed in Tables 4 and 5 under Section III of the report.

Actuarial certification

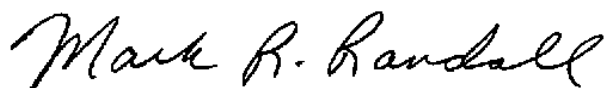
All of the tables contained in this actuarial valuation report were prepared by Gabriel, Roeder, Smith & Company. We certify that the information presented herein is accurate and fairly portrays the actuarial position of the Fund as of January 1, 2018.

All of our work conforms with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of state law and, where applicable, the Internal Revenue Code and ERISA. The undersigned are independent actuaries and consultants. Leslie Thompson is an Enrolled Actuarial and Leslie Thompson and Paul Wood are members of the American Academy of Actuaries, and meet all the Qualification Standards of the American Academy of Actuaries. Finally, all of the undersigned are experienced in performing valuations for large public retirement systems.

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Respectfully submitted,

Gabriel, Roeder, Smith & Company



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SECTION I

EXECUTIVE SUMMARY

Executive Summary

Item	January 1, 2018	January 1, 2017
	No COLA	No COLA
1. Contributions:		
a. Total normal cost	\$1,426,154	\$1,241,952
b. Employee contributions	(417,240)	(417,600)
c. Other expected contributions	-	-
d. Net employer normal cost	\$1,008,914	\$824,352
e. Amortization payment	2,174,951	2,010,733
f. Administrative expenses	91,600	88,500
g. Required contribution	\$3,275,465	\$2,923,585
h. Estimated premium tax allocation*	(3,328,000)	(3,250,000)
i. Shortfall/(surplus)	(\$52,535)	(\$326,415)
2. Funding Elements:		
a. Market value of assets (MVA)	\$81,884,149	\$74,037,986
b. Actuarial value of assets (AVA)	\$81,168,922	\$78,176,796
c. Actuarial accrued liability (AAL)	\$109,091,945	\$102,244,853
d. Unfunded/(overfunded) actuarial accrued liability	\$27,923,023	\$24,068,057
3. Contributions and Ratios:		
a. Annual required contribution	\$3,275,465	\$2,923,585
b. Actual contributions	N/A	3,290,994
i. Employer	N/A	-
ii. Other	N/A	3,290,994
c. Percentage contributed	N/A	112.57%
d. Funded ratio on an actuarial basis (AVA/AAL)	74.40%	76.46%
e. Funded ratio on a market basis (MVA/AAL)	75.06%	72.41%

*The premium tax is equal to 70% of the gross fire insurance premium taxes from fire insurance policies written in Wyoming on or after July 1, 2015. The premium tax for 2018 has been estimated based on the premium tax paid for 2017 (\$3,290,994).

SECTION II

DISCUSSION

Contribution Requirements

- Exhibits throughout this report are based primarily, unless stated otherwise, on the assumption of no future cost-of-living adjustments (COLA)
- W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above 100% plus a margin for adverse experience throughout the life of the benefit change. The actuarial value funded ratio is 74.40% and the market value funded ratio is 75.06%.
- The estimated State premium tax allocation is \$3.33 million this year, as estimated based on the actual premium tax paid for 2017 of \$3.29 million.
- The amortization payment is based upon the following assumptions:
 - 30-year closed layered funding period
 - Amortization payment amounts are calculated in such a way that they will remain level as a dollar amount.
 - Future growth in the number of active members is not reflected in the annual valuation
- The calculated funding period assuming an annual contribution of \$3.33 million is 28.0 years.
- Benefit provisions effective July 1, 2015, as authorized by new legislation in HB 72 of the 2015 General Assembly, are summarized in Appendix B.
- The actuarial assumptions have been updated since the prior valuation. For a detailed description of the experience related to these assumptions, as well as the rationale for any changes, please see our latest Wyoming Retirement System Actuarial Experience Study Report.

Calculation of Contribution Amounts

The funds available to pay benefits come from two sources, contributions and investment income on those contributions (the majority of the funds available to pay benefits typically come from investment income). The Fund receives contributions from two primary sources, state contributions equal to 70% of gross fire insurance premium taxes and member contributions of \$15.00 per month per member. In addition, the prior EMT “set-aside” funds were transferred to this plan. As shown in Table 1 under Section III of the report, the calculated employer contribution amount has three components:

- The normal cost (NC)
- The amortization payment
- The administrative expenses

The NC is the theoretical amount which would be required to pay the members’ benefits if this amount had been contributed from each member’s entry date and if the fund’s experience exactly followed the actuarial assumptions. The NC is shown in Table 1 under Section III of the report.

The actuarial accrued liability (AAL) is the difference between (i) the actuarial present value of all future benefits for all current participants of the fund, including active, inactive and retired members, and (ii) the actuarial present value of future normal costs. Thus the AAL represents the liability associated with past years. The unfunded actuarial accrued liability (UAAL) is the difference between the AAL and the actuarial value of assets (AVA). It is the shortfall/excess between the liability associated with prior years (the AAL) and the assets actually accumulated (the AVA). This shortfall/excess can arise from several sources, including actuarial gains and losses which are caused by differences between actual experience and the plan’s assumptions, changes to the plan’s actuarial assumptions, and amendments to the benefit provisions.

The amortization payment is the amount required to fund this difference. It is the amount, expressed as a level dollar amount, necessary to amortize the UAAL. This amortization is over a period of 30 years.

Administrative expenses are the average of the actual expenses for the prior two years, with each year projected at 2.50% to the valuation date.

The calculated amount is used in determining the contributions necessary to meet the Actuarially Determined Contribution for the twelve-month period beginning January 1, 2018.

Financial Data and Experience

As of January 1, 2018, the Fund has a total market value of \$82 million. Financial information was received from Eide Bailly, LLP.

Table 7 under Section III of the report shows a reconciliation of the market values between the beginning and end of 2017.

During 2017, the total investment return on the market value of assets (MVA), as reported by Meketa Investment Group, Inc., was 14.20%, as shown in Table 10 under Section III of the report.

In determining the contribution rates and funded status of the Fund, an actuarial value of assets (AVA) is used rather than the market value of assets. The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (or less than) expected investment income. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

This is a new fund established as of July 1, 2015 where the initial market value of assets includes the total amounts from the two prior funds which have been rolled into this fund. Since the new plan has greater contributions and benefit payments than the combined amounts under the prior discontinued plans, the actuarial value of assets has been reinitialized to the market value of assets as of January 1, 2015.

The development of the AVA is shown in Table 9 under Section III of the report. The AVA is \$81 million, compared to \$78 million last year. The AVA is 99.13% of the MVA as of December 31, 2017, compared to 105.59% last year.

In addition to the market return, Table 10 also shows the return on the actuarial value of assets for the Fund. For 2017, this return was 6.72%, which is less than the assumed 7.75% investment return for the prior year.

Member Data

Member data as of January 1, 2018 was supplied electronically by the Fund's staff. While we did not audit this data, we did perform various tests to ensure that it was internally consistent, consistent with the prior year's data, and was reasonable overall.

Table 15 under Section III of the report shows the number of members by category (active, inactive, retired, etc.) along with member statistics. Tables 16 through 24 show summaries of certain historical data and include membership statistics.

Of the 2,318 active participants, 216 are eligible or will become eligible for retirement in 2018.

Benefit Provisions

Appendix B of the report includes a more detailed summary of the benefit provisions for the Fund. These are the benefit provisions in effect January 1, 2016, per HB 72 as passed by the Wyoming General Assembly in the 2015 general session. A brief summary is as follows:

- *Normal Retirement Eligibility*
 - Age 60 with 5 years of service
- *Normal Retirement Benefit*
 - \$16 per month for each of the first 10 years of service and \$19 per month for each year of service over 10
- *Spouse Benefits*
 - 66% of the member's benefit payable prior to the member's death
- *Employee Contributions* are required
 - \$15 per month
- *Post-retirement Cost-of-Living Adjustments (COLAs)*
 - W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above 100% plus a margin for adverse experience throughout the life of the benefit change.

Actuarial Methods and Assumptions

Appendix A of the report includes a summary of the actuarial assumptions and methods used in this valuation. A few highlights are listed as follows:

- Costs are determined using the Entry Age Normal actuarial cost method, calculated as a level dollar amount.
- The unfunded actuarial accrued liability is amortized over an open 30 year period as a level dollar amount.
- The assumed annual investment return rate is 7.00%, with assumed inflation of 2.25%.
- Inactive vested participants are assumed to retire at normal retirement eligibility or the valuation date if already eligible to retire.
- No benefit data is available for members entitled to deferred benefits. The present value of benefits expected to be paid to vested inactive non-retired members is approximated using the data provided.

The average future lifetime for current pensioners is 16.4 years.

The actuarial assumptions and methods were reviewed in detail as part of the 2017 Experience Study covering the five year period ending December 31, 2016. Please see Appendix A for a summary of the new assumptions.

GASB and Funding Progress

Governmental Accounting Standards Board Statement Number 67 (GASB 67) contains certain accounting requirements for the Fund. Schedules, notes and required supplementary information are provided under separate cover.

SECTION III

SUPPORTING EXHIBITS

Table 1
Calculation of Annual Required Contribution
(Assumes No Future Cost-Of-Living Increases)

Item	January 1, 2018	January 1, 2017
1. Employer normal cost	\$1,008,914	\$824,352
2. Actuarial accrued liability for active members		
a. Present value of future benefits for active members	\$49,515,695	\$46,768,848
b. Less: present value of future employer normal costs	(5,280,404)	(3,621,467)
c. Less: present value of future employee contributions	(2,495,799)	(2,097,105)
d. Actuarial accrued liability	\$41,739,492	\$41,050,276
3. Total actuarial accrued liability for:		
a. Retirees and beneficiaries	\$62,537,538	\$57,054,543
b. Disabled members	-	-
c. Inactive members	4,814,915	4,140,034
d. Active members (Item 2d)	41,739,492	41,050,276
e. Total	\$109,091,945	\$102,244,853
4. Actuarial value of assets (Table 9)	\$81,168,922	\$78,176,796
5. Unfunded actuarial accrued liability (UAAL) (Item 3e - Item 4)	\$27,923,023	\$24,068,057
6. UAAL amortization period	30 years	30 years
7. Assumed payroll growth rate	0.00%	0.00%
8. Employer contribution requirement		
a. UAAL amortization payment	\$2,174,951	\$2,010,733
b. Employer normal cost	1,008,914	824,352
c. Administrative expenses	91,600	88,500
d. Contribution requirement (a + b + c)	\$3,275,465	\$2,923,585

Table 2
Cost Breakdown
(Assumes No Future Cost-Of-Living Increases)

Item	Present Value of Future Normal Costs (1)	Actuarial Accrued Liabilities (2)	Total Present Value of Benefits (3) = (1) + (2)
Age and service allowances based on total service and disability benefits likely to be rendered by present active members	\$6,182,075	\$39,673,221	\$45,855,296
Death-in-service benefits likely to be paid on behalf of present active members (employer financed portion)	198,681	704,171	902,852
Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active members	1,395,447	1,362,100	2,757,547
Benefits likely to be paid to vested inactive members	0	4,282,171	4,282,171
Benefits to be paid to members due refunds	0	532,744	532,744
Benefits to be paid to current retirees, disabled members, beneficiaries, and future beneficiaries of current retirees	0	62,537,538	62,537,538
Total	\$7,776,203	\$109,091,945	\$116,868,148
Actuarial value of assets	-	\$81,168,922	\$81,168,922
Liabilities to be covered by future contributions	\$7,776,203	\$27,923,023	\$35,699,226

Table 3

History of Total Normal Cost

(Assumes No Future Cost-Of-Living Increases)

<u>Fiscal Year Ending December 31</u>	<u>Total Normal Cost Per</u>
<u>(1)</u>	<u>Active</u>
2015	\$540
2016	\$535
2017	\$615

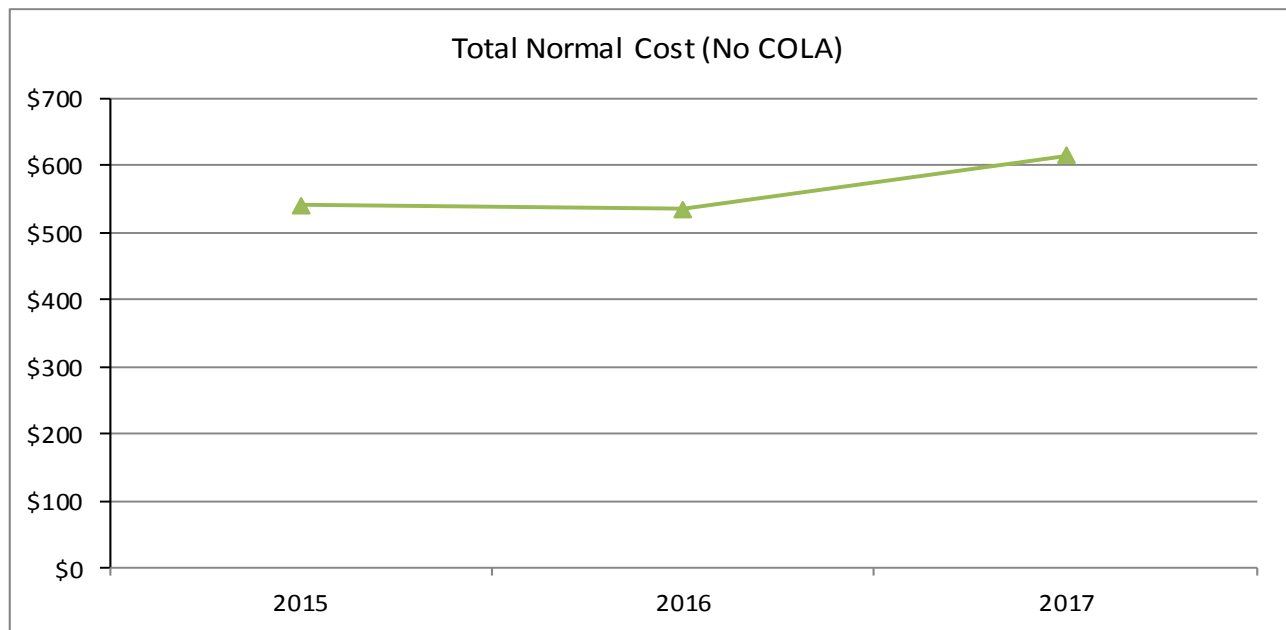


Table 4
Calculation of Total Actuarial Gain/(Loss)

Item	January 1, 2018
1. Derivation of experience gain/(loss)	
a. Unfunded actuarial accrued liability (UAAL) - previous valuation	\$24,068,057
b. Normal cost (NC) for fiscal year ending December 31, 2017	1,241,952
c. Actual administrative expenses for fiscal year ending December 31, 2017	92,288
d. Actuarially determined contribution for fiscal year ending December 31, 2017	3,341,185
e. Interest accrual:	
(i) For whole year on (a)	1,865,274
(ii) For half year on (b) + (c) - (d)	(77,769)
(iii) Total interest: (e)(i) + (e)(ii)	1,787,505
f. Change in UAAL due to programming enhancement	(879,523)
g. Change in UAAL due to assumption change	4,916,055
h. Expected UAAL current year: (a) + (b) + (c) - (d) + (e)(iii) + (f) + (g)	27,885,149
i. Actual UAAL current year	27,923,023
j. Experience gain/(loss): (h) - (i)	(37,874)
k. Experience gain/(loss) as a % of actuarial accrued liability	-0.03%
2. Approximate portion of gain/(loss) due to investments (at actuarial value)	(\$784,079)
3. Approximate portion of gain/(loss) due to contributions higher or lower than expected	\$389,948
4. Approximate portion of gain/(loss) due to liabilities: (1)(j) - (2) - (3)	\$356,257
a. Age & service retirements	841,823
b. Death-in-service	(22,701)
c. Withdrawal from employment	(720,934)
d. Rehires	(72,481)
e. Death after retirement	(56,672)
f. Other	387,222
g. Other as a % of actuarial accrued liability	0.35%

Table 5
Change in Calculated Contribution Amount Since the Prior Valuation

Item	January 1, 2018
1. Calculated contribution amount as of January 1, 2017	\$2,923,585
2. Change in contribution amount during year	
a. Change in employer normal cost	\$21,862
b. Assumption changes	344,750
c. Actuarial (gain) loss from investments on actuarial value of assets	66,116
d. Actuarial (gain) loss from liability sources and administrative expenses	(24,946)
e. Difference between contributions made and required contributions	(32,881)
f. Open amortization period reset to 30 years	(23,271)
g. Other changes	250
h. Total change	\$351,880
3. Calculated contribution amount as of January 1, 2018	\$3,275,465

Table 6
Statement of Plan Net Assets

Assets at Market Value		
Item	FYE 2017	FYE 2016
1. Cash and cash equivalents (operating cash)	\$5,265,441	\$7,761,596
2. Receivables		
a. Insurance premium tax	\$1,100,000	\$950,000
b. Employee contributions	29,266	27,510
c. Securities sold	356,096	394,610
d. Accrued interest and dividends	119,826	130,628
e. Currency contract receivable	18,411,865	26,496,957
f. Other	44,925	-
g. Rebate and fee income receivable	-	-
h. Total receivables	\$20,061,978	\$27,999,705
3. Investments, at fair value	\$80,899,815	\$68,954,536
4. Liabilities		
a. Benefits and refunds payable	-	(\$1,064)
b. Securities purchased	(474,224)	(258,273)
c. Administrative and consulting fees payable	(195,379)	(110,608)
d. Currency contract payable	(18,501,364)	(26,242,343)
e. Securities lending collateral	(5,172,118)	(4,065,563)
f. Total liabilities	(\$24,343,085)	(\$30,677,851)
5. Total market value of assets available for benefits	\$81,884,149	\$74,037,986

Table 7
Reconciliation of Plan Net Assets

Assets at Market Value		
Item	FYE 2017	FYE 2016
A. Market value of assets at beginning of year	\$74,037,986	\$71,065,986
B. Contribution income:		
1. Contributions		
a. Employee	\$417,832	\$420,922
b. Employer	-	-
c. Other	3,298,754	3,237,371
d. Total	\$3,716,586	\$3,658,293
2. Investment income		
a. Interest, dividends, and other income	\$1,417,956	\$1,449,217
b. Net appreciation	9,298,469	3,808,995
c. Investment expenses	(700,542)	(340,556)
d. Net investment income	\$10,015,883	\$4,917,656
3. Securities lending		
a. Gross income	\$67,537	\$31,929
b. Deductions	(47,667)	(9,660)
c. Net investment income	\$19,870	\$22,269
4. Benefits and refunds		
a. Refunds	(\$33,241)	(\$35,162)
b. Regular monthly benefits	(5,780,647)	(5,506,699)
c. Total	(\$5,813,888)	(\$5,541,861)
5. Administrative and miscellaneous expenses	(\$92,288)	(\$84,357)
C. Market value of assets at end of year	\$81,884,149	\$74,037,986

Table 8
Progress of Fund Through December 31, 2017

Plan Year Ending December 31	Employer Contributions*	Employee Contributions**	Administrative Expenses	Net Investment Income***	Benefit Payments	Transfers	Actuarial Value of Assets
Total	\$8,728,536	\$1,302,361	(\$253,527)	\$13,585,154	(\$16,223,379)	-	
2015	\$2,238,612	\$417,406	(\$76,882)	\$4,356,336	(\$4,867,630)	-	\$76,097,619
2016	3,198,930	459,363	(84,357)	4,047,102	(5,541,861)	-	78,176,796
2017	3,290,994	425,592	(92,288)	5,181,716	(5,813,888)	-	81,168,922

* Employer contributions equal to 50% of the gross fire insurance premium taxes from fire insurance policies written in Wyoming prior to July 1, 2015 and 70% of the gross premium taxes on or after July 1, 2015

** Employee contributions may include member redeposits and member service purchase contributions

*** Net of investment expenses

Table 9
Development of Actuarial Value of Assets

Item	FYE 2017	FYE 2016
1. Actuarial value of assets, beginning of year (before corridor)	\$78,176,796	\$76,097,619
2. Market value, end of year	\$81,884,149	\$74,037,986
3. Market value, beginning of year	\$74,037,986	\$71,065,986
4. Non-investment/administrative net cash flow:		
a. Employee contributions	\$417,832	\$420,922
b. Employer contributions	-	-
c. Other contributions	3,298,754	3,237,371
d. Refund of employee accounts	(33,241)	(35,162)
e. Retirement benefits	(5,780,647)	(5,541,861)
f. Administrative expenses	(92,288)	(84,357)
g. Total net cash flow: [sum of (4a) through (4f)]	(\$2,189,590)	(\$2,003,087)
5. Investments and securities lending:		
a. Interest and dividends on investments	\$1,417,956	\$1,449,217
b. Gross income from securities lending	67,537	31,929
c. Fees and expenses	(748,209)	(350,216)
d. Total net income: [sum of (5a) through (5c)]	\$737,284	\$1,130,930
6. Investment income:		
a. Actual market return: (2) - (3) - (4g) - (5d)	\$9,298,469	\$3,844,157
b. Assumed rate of return	7.75%	7.75%
c. Assumed amount of return	4,917,397	4,300,513
d. Amount subject to phase-in: (6a) - (6c)	\$4,381,072	(\$456,356)
7. Phase-in recognition of investment income:		
a. Current year: 0.20 * (6d)	\$876,214	(\$91,271)
b. First prior year	(91,271)	(1,257,908)
c. Second prior year	(1,257,908)	-
d. Third prior year	-	-
e. Fourth prior year	-	-
f. Total recognition	(\$472,965)	(\$1,349,179)
8. Actuarial value of assets, end of year		
a. Preliminary actuarial value of assets, end of year: (1) + (4g) + (5c) + (6c) + (7f)	\$81,168,922	\$78,176,796
b. Upper corridor limit: 120% * (2)	\$98,260,978	\$88,845,583
c. Lower corridor limit: 80% * (2)	\$65,507,319	\$59,230,389
d. Actuarial value of assets, end of year	\$81,168,922	\$78,176,796
9. Difference between market and actuarial value of assets	\$715,227	(\$4,138,810)
10. Actuarial rate of return	6.72%	5.44%
11. Market rate of return*	14.20%	7.60%
12. Ratio of actuarial value to market value of assets	99.13%	105.59%

* Current year market rate of return is based on unaudited data and is supplied by the plan's investment consultant.

Table 10

History of Investment Returns

Plan Year (1)	Market Value (2)	Actuarial Value (3)
2015	-0.26%	6.03%
2016	7.60%	5.44%
2017	14.20%	6.72%
Average returns:		
Last three years:	7.02%	6.06%

The market returns above are gross of investment expenses and were provided by the plan's investment consultant. The actuarial returns above are based on the financial information provided by the plan's auditors.

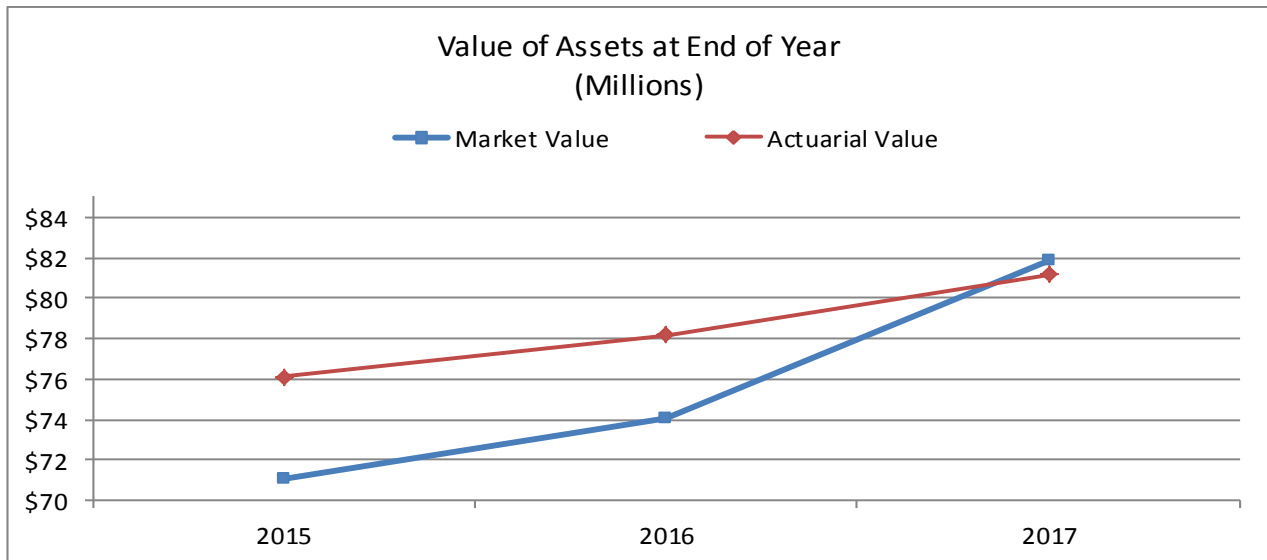


Table 11
Solvency Test

Valuation Date January 1	Total Active Member Contributions (1)	Inactive and Pensioner Liability (2)	Employer Financed Active Accrued Liability (3)	Actuarial Value of Assets	Percentage of Liabilities Covered by Assets		
					(1)	(2)	(3)
2016	\$5,369,518	\$60,709,865	\$36,199,040	\$76,097,619	100%	100%	27.7%
2017	5,467,501	61,194,577	35,582,775	78,176,796	100%	100%	32.4%
2018	5,544,708	67,352,453	36,194,784	81,168,922	100%	100%	22.9%

Table 12
Schedule of Funding Progress

(1)	(2)	(3)	(4)	(5)	(6)
Valuation Date January 1	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL) [(3) - (2)]	Funded Ratio [(2)/(3)]	UAAL per Active Member
2016	\$76,097,619	\$102,278,423	\$26,180,804	74.40%	\$11,005
2017	78,176,796	102,244,853	24,068,057	76.46%	10,374
2018	81,168,922	109,091,945	27,923,023	74.40%	12,046

Liabilities are calculated assuming no future cost-of-living increases.

Table 13

Schedule of Contributions from the Employer(s) and Other Contributing Entities

(1)	(2)	(3)	(4)
Fiscal Year Ending December 31	Actuarially Determined Contribution	Employer Contributions*	Percentage of Actuarially Determined Contribution Contributed [(3)/(2)]
2016	\$3,128,272	\$3,198,930	102.26%
2017	2,923,585	3,290,994	112.57%
2018	3,275,465	-	-

* 70% of the gross fire insurance premium taxes from fire insurance policies written in Wyoming.

Table 14
Reconciliation of Participant Data

	Active Participants	Vested Former Participants	Retired Participants	Beneficiaries	Participants Due Refunds	Total
Number as of January 1, 2017	2,320	308	1,140	235	1,400	5,403
New participants	228	-	-	-	29	257
Vested terminations	(47)	47	-	-	-	-
Retirements	(61)	(10)	71	-	-	-
Disability	-	-	-	-	-	-
Deceased with beneficiary	(9)	-	(19)	28	-	-
Deceased without beneficiary	(1)	-	(9)	(13)	(3)	(26)
Due refunds	(116)	-	-	-	116	-
Lump sum payoffs	(15)	(2)	-	-	(44)	(61)
Rehires/return to active	19	(6)	-	-	(13)	-
Certain period expired	-	-	-	-	-	-
Reclassifications	-	-	-	-	-	-
Data corrections	-	-	-	-	-	-
Number as of January 1, 2018	2,318	337	1,183	250	1,485	5,573

Table 15
Demographic Statistics

	January 1		
	2018	2017	Change
<u>Active Participants</u>			
Number	2,318	2,320	-0.1%
<i>Vested</i>	1,513	1,489	
<i>Not vested</i>	805	831	
Average age (years)	44.75	44.50	0.6%
Average service (years)	11.17	11.18	-0.1%
Average entry age (years)	33.58	33.32	0.8%
Total employee contributions with interest	\$5,544,708	\$5,467,501	1.4%
Average employee contributions with interest	\$2,392	\$2,357	1.5%
<u>Vested Former Participants</u>			
Number	337	308	9.4%
Average age (years)	49.06	49.04	0.0%
Total employee contributions with interest	\$652,302	\$599,438	8.8%
Average employee contributions with interest	\$1,936	\$1,946	-0.5%
<u>Retirees</u>			
Number	1,183	1,140	3.8%
Average age (years)	70.20	69.92	0.4%
Total annual benefits	\$5,252,966	\$5,027,891	4.5%
Average annual benefit	\$4,440	\$4,410	0.7%
<u>Beneficiaries</u>			
Number	250	235	6.4%
Average age (years)	72.72	72.16	0.8%
Total annual benefits	\$642,528	\$591,978	8.5%
Average annual benefit	\$2,570	\$2,519	2.0%
<u>Participants Due Refunds</u>			
Number	1,485	1,400	6.1%
Total Refunds Due	\$532,744	\$505,738	5.3%

Table 16

Distribution of Male Active Members by Age and by Years of Service

Average Age = 44.6 Average Service = 11.8

Age Last Birthday		Whole Years of Service at Valuation Date							Totals
		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
Less than 20	Count	17	-	-	-	-	-	-	17
	Total Contributions	\$2,551	-	-	-	-	-	-	\$2,551
	Avg. Contributions	\$150	-	-	-	-	-	-	\$150
20-24	Count	72	6	-	-	-	-	-	78
	Total Contributions	26,771	\$5,814	-	-	-	-	-	32,585
	Avg. Contributions	372	\$969	-	-	-	-	-	418
25-29	Count	111	39	1	-	-	-	-	151
	Total Contributions	40,491	44,865	\$1,874	-	-	-	-	87,230
	Avg. Contributions	365	1,150	\$1,874	-	-	-	-	578
30-34	Count	125	74	29	4	-	-	-	232
	Total Contributions	55,170	96,278	63,424	\$12,136	-	-	-	227,008
	Avg. Contributions	441	1,301	2,187	\$3,034	-	-	-	978
35-39	Count	97	87	56	24	2	-	-	266
	Total Contributions	40,990	117,740	129,817	78,070	\$8,875	-	-	375,492
	Avg. Contributions	423	1,353	2,318	3,253	\$4,437	-	-	1,412
40-44	Count	76	68	53	39	21	1	-	258
	Total Contributions	34,525	87,767	126,631	143,809	103,089	\$7,587	-	503,407
	Avg. Contributions	454	1,291	2,389	3,687	4,909	\$7,587	-	1,951
45-49	Count	57	49	38	48	29	21	3	245
	Total Contributions	23,821	66,631	90,563	173,071	142,262	126,050	\$25,912	648,312
	Avg. Contributions	418	1,360	2,383	3,606	4,906	6,002	\$8,637	2,646
50-54	Count	35	33	50	39	34	66	21	278
	Total Contributions	11,883	46,632	133,380	149,611	172,614	432,971	175,692	1,122,781
	Avg. Contributions	340	1,413	2,668	3,836	5,077	6,560	8,366	4,039
55-59	Count	32	28	30	44	58	72	73	337
	Total Contributions	13,740	40,210	81,808	157,802	302,175	456,136	614,023	1,665,895
	Avg. Contributions	429	1,436	2,727	3,586	5,210	6,335	8,411	4,943
60-64	Count	17	24	14	9	5	13	17	99
	Total Contributions	7,584	38,240	45,680	30,898	26,564	80,621	144,239	373,826
	Avg. Contributions	446	1,593	3,263	3,433	5,313	6,202	8,485	3,776
65-69	Count	9	8	9	-	-	-	-	26
	Total Contributions	3,526	12,231	21,539	-	-	-	-	37,295
	Avg. Contributions	392	1,529	2,393	-	-	-	-	1,434
70 & Over	Count	7	3	-	-	-	-	-	10
	Total Contributions	2,967	3,713	-	-	-	-	-	6,680
	Avg. Contributions	424	1,238	-	-	-	-	-	668
Totals	Count	655	419	280	207	149	173	114	1,997
	Total Contributions	\$264,019	\$560,121	\$694,716	\$745,396	\$755,580	\$1,103,365	\$959,865	\$5,083,062
	Avg. Contributions	\$403	\$1,337	\$2,481	\$3,601	\$5,071	\$6,378	\$8,420	\$2,545

Table 17

Distribution of Female Active Members by Age and by Years of Service

Average Age = 45.8 Average Service = 7.3

Age Last Birthday		Whole Years of Service at Valuation Date							Totals
		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
Less than 20	Count	4	-	-	-	-	-	-	4
	Total Contributions	\$829	-	-	-	-	-	-	\$829
	Avg. Contributions	\$207	-	-	-	-	-	-	\$207
20-24	Count	12	1	-	-	-	-	-	13
	Total Contributions	5,152	\$945	-	-	-	-	-	6,097
	Avg. Contributions	429	\$945	-	-	-	-	-	469
25-29	Count	19	6	-	-	-	-	-	25
	Total Contributions	8,058	7,388	-	-	-	-	-	15,446
	Avg. Contributions	424	1,231	-	-	-	-	-	618
30-34	Count	19	9	1	-	-	-	-	29
	Total Contributions	7,345	11,887	\$2,277	-	-	-	-	21,509
	Avg. Contributions	387	1,321	\$2,277	-	-	-	-	742
35-39	Count	27	17	2	1	-	-	-	47
	Total Contributions	11,911	23,228	4,860	\$3,757	-	-	-	43,756
	Avg. Contributions	441	1,366	2,430	\$3,757	-	-	-	931
40-44	Count	18	8	4	-	1	-	-	31
	Total Contributions	8,795	9,673	13,282	-	\$4,364	-	-	36,114
	Avg. Contributions	489	1,209	3,320	-	\$4,364	-	-	1,165
45-49	Count	19	8	5	5	1	1	-	39
	Total Contributions	7,337	10,685	11,658	17,389	4,353	\$5,875	-	57,297
	Avg. Contributions	386	1,336	2,332	3,478	4,353	\$5,875	-	1,469
50-54	Count	14	14	8	1	-	1	1	39
	Total Contributions	4,910	20,997	18,502	4,970	-	5,633	\$8,739	63,751
	Avg. Contributions	351	1,500	2,313	4,970	-	5,633	\$8,739	1,635
55-59	Count	6	22	4	4	3	5	1	45
	Total Contributions	3,894	32,636	9,008	14,139	14,404	33,566	7,548	115,194
	Avg. Contributions	649	1,483	2,252	3,535	4,801	6,713	7,548	2,560
60-64	Count	6	14	2	3	3	4	1	33
	Total Contributions	2,028	20,276	3,887	10,432	14,097	25,293	7,297	83,310
	Avg. Contributions	338	1,448	1,943	3,477	4,699	6,323	7,297	2,525
65-69	Count	5	7	1	-	-	-	-	13
	Total Contributions	3,247	9,368	2,203	-	-	-	-	14,818
	Avg. Contributions	649	1,338	2,203	-	-	-	-	1,140
70 & Over	Count	1	2	-	-	-	-	-	3
	Total Contributions	644	2,879	-	-	-	-	-	3,524
	Avg. Contributions	644	1,440	-	-	-	-	-	1,175
Totals	Count	150	108	27	14	8	11	3	321
	Total Contributions	\$64,150	\$149,963	\$65,676	\$50,687	\$37,219	\$70,367	\$23,583	\$461,646
	Avg. Contributions	\$428	\$1,389	\$2,432	\$3,621	\$4,652	\$6,397	\$7,861	\$1,438

Table 18

Distribution of Total Active Members by Age and by Years of Service

Average Age = 44.8 Average Service = 11.2

Age Last Birthday		Whole Years of Service at Valuation Date							Totals
		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
Less than 20	Count	21	-	-	-	-	-	-	21
	Total Contributions	\$3,380	-	-	-	-	-	-	\$3,380
	Avg. Contributions	\$161	-	-	-	-	-	-	\$161
20-24	Count	84	7	-	-	-	-	-	91
	Total Contributions	31,923	\$6,759	-	-	-	-	-	38,682
	Avg. Contributions	380	\$966	-	-	-	-	-	425
25-29	Count	130	45	1	-	-	-	-	176
	Total Contributions	48,550	52,253	\$1,874	-	-	-	-	102,677
	Avg. Contributions	373	1,161	\$1,874	-	-	-	-	583
30-34	Count	144	83	30	4	-	-	-	261
	Total Contributions	62,514	108,165	65,702	\$12,136	-	-	-	248,516
	Avg. Contributions	434	1,303	2,190	\$3,034	-	-	-	952
35-39	Count	124	104	58	25	2	-	-	313
	Total Contributions	52,900	140,969	134,676	81,827	\$8,875	-	-	419,248
	Avg. Contributions	427	1,355	2,322	3,273	\$4,437	-	-	1,339
40-44	Count	94	76	57	39	22	1	-	289
	Total Contributions	43,320	97,440	139,913	143,809	107,454	\$7,587	-	539,521
	Avg. Contributions	461	1,282	2,455	3,687	4,884	\$7,587	-	1,867
45-49	Count	76	57	43	53	30	22	3	284
	Total Contributions	31,158	77,317	102,221	190,460	146,616	131,925	\$25,912	705,609
	Avg. Contributions	410	1,356	2,377	3,594	4,887	5,997	\$8,637	2,485
50-54	Count	49	47	58	40	34	67	22	317
	Total Contributions	16,793	67,629	151,882	154,581	172,614	438,603	184,430	1,186,533
	Avg. Contributions	343	1,439	2,619	3,865	5,077	6,546	8,383	3,743
55-59	Count	38	50	34	48	61	77	74	382
	Total Contributions	17,634	72,846	90,815	171,941	316,579	489,702	621,571	1,781,089
	Avg. Contributions	464	1,457	2,671	3,582	5,190	6,360	8,400	4,663
60-64	Count	23	38	16	12	8	17	18	132
	Total Contributions	9,612	58,516	49,567	41,330	40,662	105,914	151,535	457,135
	Avg. Contributions	418	1,540	3,098	3,444	5,083	6,230	8,419	3,463
65-69	Count	14	15	10	-	-	-	-	39
	Total Contributions	6,773	21,599	23,742	-	-	-	-	52,114
	Avg. Contributions	484	1,440	2,374	-	-	-	-	1,336
70 & Over	Count	8	5	-	-	-	-	-	13
	Total Contributions	3,612	6,593	-	-	-	-	-	10,204
	Avg. Contributions	451	1,319	-	-	-	-	-	785
Totals	Count	805	527	307	221	157	184	117	2,318
	Total Contributions	\$328,169	\$710,084	\$760,392	\$796,083	\$792,798	\$1,173,732	\$983,449	\$5,544,708
	Avg. Contributions	\$408	\$1,347	\$2,477	\$3,602	\$5,050	\$6,379	\$8,406	\$2,392

Table 19

Schedule of Pensions Recipients Added to and Removed from Rolls

Fiscal Year Ending December 31	Added to Rolls*		Removed from Rolls		Total		Percent Increase in	Average
		Annual Pension Benefits		Annual Pension Benefits		Annual Pension Benefits	Annual Pension Benefits	Annual Pension Benefit
	Count		Count		Count			
2014	106	\$368,168	35	\$114,448	1,251	\$4,250,343		\$3,398
2015	81	1,113,515	25	74,858	1,307	5,289,000	24.44%	4,047
2016	108	461,121	40	130,252	1,375	5,619,869	6.26%	4,087
2017	99	414,899	41	139,273	1,433	5,895,495	4.90%	4,114

* Added to amounts in 2015 include increased benefit amounts under the provisions of the new plan.

Table 20
Retirees by Monthly Benefit and Age

Males	Age Last Birthday						
Benefit Amount	Under 60	60-64	65-69	70-74	75-79	80 & over	Total
Under \$50	-	-	-	-	-	-	-
\$50 - 99	-	1	1	3	1	1	7
\$100 - 149	-	4	4	11	8	3	30
\$150 - 199	-	2	24	19	13	26	84
\$200 - 249	-	13	25	21	29	41	129
\$250 - 299	-	14	22	25	18	17	96
\$300 - 349	-	17	32	31	17	10	107
\$350 - 399	-	27	42	36	8	8	121
\$400 & Over	-	205	163	82	31	21	502
Total	-	283	313	228	125	127	1,076
Females							
Benefit Amount	Under 60	60-64	65-69	70-74	75-79	80 & over	Total
Under \$50	-	-	-	-	-	-	-
\$50 - 99	-	1	-	3	3	-	7
\$100 - 149	-	4	2	2	5	1	14
\$150 - 199	-	3	5	-	1	3	12
\$200 - 249	-	3	5	5	4	4	21
\$250 - 299	-	1	1	2	-	-	4
\$300 - 349	-	4	3	4	1	1	13
\$350 - 399	-	2	6	4	1	-	13
\$400 & Over	-	10	12	1	-	-	23
Total	-	28	34	21	15	9	107
Males & Females							
Benefit Amount	Under 60	60-64	65-69	70-74	75-79	80 & over	Total
Under \$50	-	-	-	-	-	-	-
\$50 - 99	-	2	1	6	4	1	14
\$100 - 149	-	8	6	13	13	4	44
\$150 - 199	-	5	29	19	14	29	96
\$200 - 249	-	16	30	26	33	45	150
\$250 - 299	-	15	23	27	18	17	100
\$300 - 349	-	21	35	35	18	11	120
\$350 - 399	-	29	48	40	9	8	134
\$400 & Over	-	215	175	83	31	21	525
Total	-	311	347	249	140	136	1,183

Table 21
Beneficiaries by Monthly Benefit and Age

Males	Age Last Birthday								
Benefit Amount	Under 50	50-54	55-59	60-64	65-69	70-74	75-79	80 & over	Total
Under \$50	-	-	-	-	-	-	-	-	-
\$50 - 99	-	-	-	-	1	-	-	-	1
\$100 - 149	-	-	-	-	-	1	1	1	3
\$150 - 199	-	-	-	-	1	-	-	1	2
\$200 - 249	-	-	-	1	-	-	1	-	2
\$250 - 299	-	-	-	-	1	-	-	-	1
\$300 - 349	-	-	-	-	-	-	-	1	1
\$350 - 399	-	-	-	-	-	-	-	-	-
\$400 & Over	-	-	-	-	-	-	-	-	-
Total	-	-	-	1	3	1	2	3	10
Females									
Benefit Amount	Under 50	50-54	55-59	60-64	65-69	70-74	75-79	80 & over	Total
Under \$50	-	-	-	-	-	-	-	1	1
\$50 - 99	-	-	1	-	-	-	-	2	3
\$100 - 149	-	-	2	2	6	2	6	40	58
\$150 - 199	-	-	5	2	3	11	15	19	55
\$200 - 249	-	-	7	6	6	8	10	12	49
\$250 - 299	-	-	4	5	7	5	5	6	32
\$300 - 349	-	-	5	4	6	2	1	2	20
\$350 - 399	-	-	5	3	3	4	-	-	15
\$400 & Over	-	-	2	1	1	3	-	-	7
Total	-	-	31	23	32	35	37	82	240
Males & Females									
Benefit Amount	Under 50	50-54	55-59	60-64	65-69	70-74	75-79	80 & over	Total
Under \$50	-	-	-	-	-	-	-	1	1
\$50 - 99	-	-	1	-	1	-	-	2	4
\$100 - 149	-	-	2	2	6	3	7	41	61
\$150 - 199	-	-	5	2	4	11	15	20	57
\$200 - 249	-	-	7	7	6	8	11	12	51
\$250 - 299	-	-	4	5	8	5	5	6	33
\$300 - 349	-	-	5	4	6	2	1	3	21
\$350 - 399	-	-	5	3	3	4	-	-	15
\$400 & Over	-	-	2	1	1	3	-	-	7
Total	-	-	31	24	35	36	39	85	250

Table 22
Pensions Awarded in 2017 by Status

Average Age = 61.1

Males & Females	Status		
Benefit Amount	Retirees	Beneficiaries	Total
Under \$50	0	0	0
\$50-\$99	1	1	2
\$100-\$149	5	6	11
\$150-\$199	5	6	11
\$200-\$249	7	2	9
\$250-\$299	3	5	8
\$300-\$349	7	3	10
\$350-\$399	6	5	11
\$400 & over	37	0	37
Total	71	28	99
Males & Females			
Age Last Birthday	Retirees	Beneficiaries	Total
Under 50	0	2	2
50-54	0	2	2
55-59	0	3	3
60-64	66	1	67
65-69	4	5	9
70-74	1	3	4
75-79	0	6	6
80-84	0	5	5
85 & over	0	1	1
Total	71	28	99

Table 23

Retirees by Service at Retirement and Years Since Retirement

Average Service at Retirement = 18.7 Average Years Since Retirement = 9.5

Service at Retirement		Years Elapsed Since Retirement							Totals
		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
Less than 5	Count	1	-	3	1	-	-	-	5
	Avg. Benefit	\$119	-	\$236	\$257	-	-	-	\$217
5-9	Count	41	22	7	14	7	5	1	97
	Avg. Benefit	\$121	\$141	\$149	\$171	\$177	\$176	\$120	\$142
10-14	Count	48	41	42	50	23	6	2	212
	Avg. Benefit	\$202	\$217	\$224	\$219	\$228	\$222	\$249	\$217
15-19	Count	33	54	58	34	11	7	4	201
	Avg. Benefit	\$306	\$311	\$305	\$302	\$297	\$306	\$276	\$305
20-24	Count	67	102	62	15	10	7	-	263
	Avg. Benefit	\$403	\$398	\$394	\$394	\$352	\$373	-	\$396
25-29	Count	96	67	39	11	18	-	-	231
	Avg. Benefit	\$496	\$482	\$481	\$452	\$445	-	-	\$483
30-34	Count	60	45	19	13	-	-	-	137
	Avg. Benefit	\$571	\$565	\$555	\$529	-	-	-	\$563
35 & Over	Count	23	10	3	1	-	-	-	37
	Avg. Benefit	\$644	\$538	\$581	\$720	-	-	-	\$612
Totals	Count	369	341	233	139	69	25	7	1,183
	Avg. Benefit	\$403	\$389	\$362	\$305	\$308	\$279	\$246	\$370

Table 24

Retirees by Year of Retirement

January 1, 2018 Total = 1,183

Year of Retirement	Count	Year of Retirement	Count
Under 1981	-	1999	13
1981	-	2000	28
1982	-	2001	24
1983	2	2002	45
1984	-	2003	38
1985	1	2004	38
1986	3	2005	39
1987	-	2006	49
1988	2	2007	66
1989	2	2008	50
1990	4	2009	53
1991	8	2010	65
1992	8	2011	72
1993	6	2012	101
1994	10	2013	87
1995	15	2014	87
1996	17	2015	60
1997	20	2016	71
1998	28	2017*	71

**May include retirements as of January 1, 2018*

Table 25
Thirty Year Projected Benefit Payments

Year Ending December 31	Actives	Retirees*	Total
2018	\$ 321,476	\$ 6,007,834	\$ 6,329,311
2019	681,280	5,958,447	6,639,727
2020	1,069,874	5,907,232	6,977,106
2021	1,447,715	5,857,138	7,304,853
2022	1,791,851	5,788,175	7,580,026
2023	2,148,423	5,719,039	7,867,462
2024	2,498,217	5,642,294	8,140,511
2025	2,851,296	5,559,449	8,410,745
2026	3,161,949	5,468,358	8,630,308
2027	3,410,274	5,371,149	8,781,423
2028	3,647,243	5,265,363	8,912,606
2029	3,893,372	5,156,285	9,049,657
2030	4,120,739	5,039,932	9,160,671
2031	4,342,380	4,914,197	9,256,577
2032	4,563,996	4,777,056	9,341,052
2033	4,763,207	4,636,417	9,399,624
2034	4,948,522	4,488,773	9,437,295
2035	5,108,524	4,331,254	9,439,778
2036	5,258,888	4,168,936	9,427,824
2037	5,447,012	4,003,738	9,450,750
2038	5,635,383	3,825,533	9,460,916
2039	5,788,100	3,648,844	9,436,943
2040	5,930,877	3,464,357	9,395,234
2041	6,060,093	3,283,230	9,343,323
2042	6,198,573	3,093,687	9,292,259
2043	6,328,339	2,900,837	9,229,175
2044	6,414,873	2,704,258	9,119,131
2045	6,467,541	2,505,142	8,972,684
2046	6,513,071	2,307,849	8,820,921
2047	6,525,807	2,113,729	8,639,536

* Includes Disabled Members, Beneficiaries, and Deferred Vested Members.

APPENDIX A

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Summary of Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2018 actuarial valuation report.

1. Valuation Date

The valuation date for any given year is January 1st, the first day of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

2. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method, amortized as a level dollar amount. Under this method, the employer contribution amount is the sum of (i) the employer normal cost amount, and (ii) the amount that will amortize the unfunded actuarial accrued liability (UAAL).

- a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 7.00%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, and sex. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, or survivor's benefit. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Fund on account of the present group of participants and beneficiaries.
- b. The employer contributions required to support the benefits of the Fund are determined using a level funding approach, and consist of a normal cost contribution and a unfunded accrued liability contribution.
- c. The normal cost contribution is determined using the "entry age normal" actuarial cost method. Under this method, a calculation is made to determine the average uniform and constant employer contribution amount which, if applied to each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his/her behalf based on the benefits provisions applicable for the individual member.
- d. The unfunded actuarial accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability and amortizing the result over 30 years from the valuation date.

3. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income, with interest, dividends, and other income recognized immediately. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

4. Economic Assumptions

Investment return: 7.00% per year, compounded annually, composed of an assumed 2.25% inflation rate and a 4.75% net real rate of return. This rate represents the assumed return, net of investment expenses.

5. Demographic Assumptions

a. Rates Before Retirement

Healthy Pre-Retirement Mortality:

RP-2014 Employee Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Healthy Post-Retirement Mortality:

RP-2014 Healthy Annuitant Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 88%

Age	Pre-Retirement		Post-Retirement	
	Projected to 2018 using Scale MP-2017			
	Male	Female	Male	Female
20	0.04%	0.02%	0.04%	0.01%
25	0.05%	0.02%	0.06%	0.03%
30	0.05%	0.02%	0.09%	0.06%
35	0.06%	0.03%	0.13%	0.09%
40	0.06%	0.04%	0.19%	0.14%
45	0.09%	0.06%	0.27%	0.18%
50	0.16%	0.11%	0.39%	0.24%
55	0.27%	0.17%	0.56%	0.32%
60	0.47%	0.25%	0.78%	0.47%
65	0.83%	0.36%	1.11%	0.70%
70	1.35%	0.61%	1.64%	1.09%
75			2.58%	1.77%
80			4.31%	2.98%
85			7.50%	5.22%
90			13.21%	9.25%
95			21.17%	15.41%
100			30.66%	23.44%

b. Withdrawal Rates

Age	Withdrawal	
	Ultimate	
	Male	Female
20	20.00%	20.00%
25	11.00%	11.00%
30	8.00%	8.00%
35	5.00%	5.00%
40	5.00%	5.00%
45	3.00%	3.00%
50	2.00%	2.00%
55	2.00%	2.00%
60	2.00%	2.00%

Service	Withdrawal	
	First five years	
	Male	Female
1	16.0%	16.0%
2	15.5%	15.5%
3	15.0%	15.0%
4	13.0%	13.0%
5	10.0%	10.0%

c. Retirement Rates

Age	Rates
<60	0.0%
60	70.0%
61	15.0%
62	15.0%
63	20.0%
64	25.0%
65	25.0%
66	30.0%
67	40.0%
68	40.0%
69	75.0%
70	100.0%

6. Other Assumptions

- Percent married: 85% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.
- Administrative expenses: Average of actual expenses for the prior two years, with each year projected at 2.50% to the valuation date.
- Decrement timing: Decrements of all types are assumed to occur mid-year.

- f. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- g. Incidence of contributions: Contributions are assumed to be received continuously throughout the year.
- h. Benefit service: All members are assumed to accrue one year of service each year.
- i. Premium tax allocation: Provided by staff and based on booked total premium taxes.
- j. Percent of eligible deferred vested members electing a refund: 25% of all future deferred vested members are assumed to leave their contributions in the fund and elect a deferred vested annuity payable commencing at age 60.
- k. No benefit amount data is available for members entitled to deferred benefits. The benefit is estimated using the final average compensation and service provided by WRS.

APPENDIX B

SUMMARY OF PLAN PROVISIONS

Summary of Plan Provisions

Covered Members

Any volunteer firefighter or volunteer EMT for whom payments are received by the Volunteer Firefighter and EMT pension account as prescribed in W.S. 35-9-621(e).

Service Retirement

Eligibility

Age 60 with 5 years of service.

Monthly Benefit

\$16 per month for each of the first 10 years of service and \$19 per month for each year of service over 10.

Normal Form of Payment is a 66% Joint & Survivor Annuity for married retirees and life annuity for unmarried retirees.

Any contributing member of the discontinued Volunteer Firefighter Pension Plan and the Volunteer Emergency Medical Technician Pension Plan on June 30, 2015 is grandfathered in certain provisions of the discontinued plans, including receiving the greater of the benefit under the previous plan and the service retirement benefit under this plan.

Vesting

Any member with five or more years of service who has left employment, and who has not withdrawn accumulated contributions, is eligible to receive the above benefit or can elect to receive a lump-sum refund of contributions with interest. In addition, a member with at least ten years of service may gain extra years of service by continuing to contribute, up to a maximum number of months served as an active member. A member who terminates with less than five years of service is only eligible for the lump-sum benefit.

Pre-retirement Death Benefit

Eligibility

No age or service requirements.

Monthly Benefit

Upon the death of any participating member, the board shall authorize a monthly payment to the surviving spouse of the member during the spouse's remaining lifetime of an amount equal to 66% of the amount calculated above based on actual years of service, or five years of service if greater. Benefits are also payable to children under age 21, equal to 33% of the amount calculated above, upon death of the member and spouse.

Post-retirement Death Benefit

Monthly Benefit	66% of the member's benefit payable prior to the member's death. Benefits are also payable to children under age 21, equal to 33% of the amount calculated above, upon death of the member and spouse.
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Lump Sum Death Benefit

Benefit	A lump sum payment of \$5,000, or \$2,500 for members who contributed \$5.00 per month before July 1, 1989, less the amount of the monthly benefits paid to the estate upon the spouse's death. For a deceased member without an eligible survivor, the greater of the deceased member's account or \$5,000 (\$2,500 for certain members) is payable to the estate of the deceased member.
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Contributions

Employee	\$15.00 per month.
State	Up to 70% of gross fire insurance premium taxes paid on fire insurance policies in Wyoming. Once the funded ratio rises to 107%, contributions may drop to a level no less than 60% of the gross fire insurance premium taxes paid on fire insurance policies in Wyoming.
Interest	3.0% annually.

Cost-of-Living Improvements

W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above 100% plus a margin for adverse experience throughout the life of the benefit change.